

Running head: PRODUCT PLACEMENT IN HOUSE OF CARDS

Product placement in House of Cards:

The effects of mode of presentation and prominence on memory

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**Abstract**

Product placement refers to the inclusion of commercial products in non-commercial settings. Research has typically focuses on attempting to determine what characteristics make a product placement more effective and is often measured by explicit memory of the brands presented. Previous studies have had issues with generalizability due to the lack of an objective and consistent use of an operational definition for factors such as prominence. This study aims at validating a coding system developed by Concave Brand Tracking, which established and operationally defined five levels of visual prominence. This study measures explicit memory for each of the five levels of visual prominence with the hypothesis that, as level of prominence increases the memory of the exposure to the brand would increase as well. The results of the experiment support this hypothesis. The effects of presentation mode (i.e. audio or visual) on memory were also investigated. The hypothesis based on the theory of dual coding was, when a product has both an audio and visual presentation, memory is improved compared to a product placement using a single presentation mode. This hypothesis was also supported by the results of the experiment. Overall this study suggests both mode of presentation and level of prominence have an impact on viewer's ability to accurately remember exposure to product placement within the Netflix series House of Cards.

*Keywords:* product placement, memory, recall, Netflix, House of Cards

**Introduction**

The purpose of the study was to objectively measure differences in memory of product placements within the Netflix series House of Cards. We were interested in investigating the differences in memory that occur as a result of the way in which products are placed within a show, this placement can vary in a number of ways. This study investigates and discusses two factors by which placements vary: those of different prominence levels (using the operational definitions provided by Concave Brand Tracking) and mode of presentation.

Product placement is often noticed by program viewers in obvious frames of a main character drinking a cola or driving an expensive car. Although many may consider this a modern attempt at creating revenue, these bothersome and often obnoxious shots have a long and complex history, dating as far back as the 1800's (Newell, Salmon, & Change, 2006). For example, in Charles Dickens's book published in 1836, "The Pickwick Papers," the name Pickwick came from a major carriage company, and the company also makes an appearance in the story. Similarly, Jules Verne's "Around the World in 80 Days," published in 1873, had several shipping companies competing to be mentioned in the book (Newell, Salmon, & Change, 2006). These product placements were the forefathers for a major industry, such as that of the close up shot of Hersey's chocolate in the 1927 winner of the Best Picture Oscar "Wings". There have been many names for these product placements, such as "tie-ins" or "publicity by motion picture" and were presumed by many to be a trade off between the movie producers getting free props and companies getting free publicity (Newell, Salmon, & Change, 2006, Walton, 2010). Often, the products displayed in various media forms were given by the company

of the product to the media producers, otherwise the producers would buy the products themselves to use in their media (Brennan & Babin, 2004).

It was not until the 1940's that this trend began to change, at which point, payment was included, along with the product, by the companies looking for creative advertisement of their product (Brennan & Babin, 2004). The term product placement and its consistent use in both entertainment and research literature, however, did not flourish until the 1980's, when it gained attention due to its use and success in the 1982 film "E.T. The Extra Terrestrial" (Brennan & Babin, 2004, Newell, Salmon, & Change, 2006). After the use of Hershey's Reese's Pieces in the film to lure the extra terrestrial to the main character's home, along with off screen cross promotion, there was a reported 65% increase in sales for Hershey's products (Gupta & Lord, 1998, Brennan & Babin 2004, Newell, Salmon, & Change, 2006, Walton, 2010). This success is argued to have been the major event that bolstered the attention of both companies and researchers into product placement and its possible application, as well as how to make it most effective in gaining the attention from the viewer in order to improve product sales (Gupta & Lord, 1998, Newell, Salmon, & Change, 2006, Walton, 2010). A larger number of companies gained interest as they realized it was an opportunity to not only advertise their products, but also grab the viewer's attention in a form that is harder to ignore than a commercial. During commercials viewers can change the channel, ignore it, or use the time to leave the room (Brennan & Babin, 2004). Companies also became more interested due to the prospect of increasing revenue, as Kivijarv (2005) valued product placement in movies to be worth \$1.2 billion each year, and television earnings at \$1.8 billion (Newell, Salmon, & Change, 2006).

The downfalls associated with commercial advertisements (the obvious intention of trying to sell a product, and the ability of viewers to ignore the television during commercial breaks) that originally made product placement an attractive option have continued, if not intensified, with advancements in the field of television and movies (Jenner, 2014). There have been developments such as DVR's and TIVO in which skipping a commercial is possible, as well as the ubiquitous popularity of Netflix in which there are no commercials at all. It is therefore reasonable that the value of effective and efficient product placement will continually increase as a result of the difficult situation that companies are in for trying to advertise their products to consumers (Köllisch, Nurminen, & Tiavin, 2015). As the quantity of on-screen product placements increased, product placement has gained the attention of researchers as well (Law & Braun 2004, Brennan & Babin, 2004, Eliashberg, Elberse, & Leenders, 2006, Babin, 1996). Product placement has been defined within the literature as "the purposeful incorporation of commercial content into noncommercial settings" (Ginosar & Levi-Faur, 2010). Research on product placement originally focused almost exclusively on memory of the products seen within the media, however, the past few decades have shown a shift in focus towards attempting to determine what factors make a particular product placement effective and the difference between explicit memory and implicit product attitudes (Russell 2002, Yang & Roskos-Ewoldsen 2007, Williams, Petrosky, Hernandez, & Page, 2011, Van Reijmersdal, Neijens, & Smit, 2009, Newell, Salmon, & Change, 2006, Walton, 2010). This focus led to a number of factors being researched in an attempt to determine what characteristics make a product placement effective (Homer, 2009, Gupta & Lord, 1998, Brennan & Babin, 2004, Russell, 2002, d'Astous & Chartier, 2000).

These characteristics included factors such as repetition and the potentially harmful effects that a high rate of repetition can have on the viewer's feelings towards a brand (Homer 2009). Mode of presentation was also investigated as researchers became interested in the possible differences in memory as a result of the way the product is presented within the show, such as visually only, audio only, or both (Gupta & Lord, 1998, Brennan & Babin, 2004). Another factor explored was plot connection, or the degree to which the product was integrated into the plot of the show. In other words, how did characters interact with the product? Was the product relevant to driving the plot forward (high degree of plot connection) or was it merely a prop for keeping the actors and actresses appearing natural (low degree of plot connection) (Russell, 2002). A major factor that has been investigated is prominence (d'Astous & Chartier, 2000, Brennan & Babin, 2004). This factor refers to the degree to which the product possesses characteristics that cause it to be central to the scene, and the viewer's attention (Ginosar and Levi-Faur, 2010, d'Astous & Chartier, 2000, Brennan & Babin, 2004). The current study looks to objectively define prominence, as a major issue in product placement research is that there has been great variability in the definition of prominence; some studies define prominence using length of screen time, or size and visibility of logo, and these factors are often subjectively determined by researchers for each specific study, which reduces the ability of different researchers to draw similar conclusions (d'Astous & Chartier, 2000, Kozary, & Baxter, 2010).

As literature accumulated on the topic of product placement, many researchers focused on unique factors and defined them uniquely for their research (Gupta & Lord 1998, Law & Braun, 2004, Brennan & Babin, 2004, Russell, 2002, Homer, 2009). Issues

have surfaced, often with contradictory findings for the impact of prominence, and gaps in past research are left due to this lack of a consistent operational definition that has been validated and used consistently between researchers (Chan, 2012). For example, in a Gupta and Lord (1998) study, the terms subtle and prominent were used and defined based on size, visibility and position on the screen (Gupta & Lord, 1998). However, Brennan and Babin (2004) used the terms creative (for subtle) and on-set (for prominent) to define level of prominence and defined them on the basis of placement in either the background or foreground (Brennan & Babin, 2004). Russell (2002) defined prominence based on level of plot connection (Russell, 2002). These examples show that one way to clarify research and the impact of product placement would be to operationally define prominence in a consistent way. Recently, a marketing company, Concave Brand Tracking, has attempted to standardize the levels of prominence for product placements. The operational definitions established by Concave Brand Tracking require evidence of validity. This study aims to investigate the five levels of prominence developed to test whether increased level of prominence corresponds to a higher rate of recall, as has been suggested by past research (Ginosar and Levi-Faur, 2010, d'Astous & Chartier, 2000, Brennan & Babin, 2004).

The current study aims to accomplish this by objectively measuring differences in memory of different product placements that vary in level of prominence and mode of presentation. The operational definitions for each level of prominence have been provided by Concave Brand Tracking and were developed to establish a standardized set of operational definitions for product placements. Concave Brand Tracking has developed these definitions in a way that appropriately values product placements based

on the different levels of prominence. The company has developed the five levels of visual prominence for product placements, and also, whether or not the product had an audible mention. The development of this coding, if tested and validated, can assist in bridging the disconnect between the industry and the scientific literature on the factors that make a particular product placement effective, which is extremely valuable as the industry of product placement has been valued at over a billion dollars, yearly (Newell, Salmon, & Change, 2006). The current study aims to add to product placement literature by testing and validating the system provided by Concave Brand Tracking to put forth a consistent operational definition, which will improve the ability of researchers and advertisers alike in comparing the results between studies for objective determination of the memory of product placements.

The current study also intends on adding to existing research by allowing participants to view the stimulus in a much more realistic viewing environment. This is particularly useful due to new viewing techniques, such as Netflix, that enables binge watching, or the watching of multiple television episodes back to back, as opposed to in previous eras when viewers were required to wait until the following week to watch the next episode in a television series (Jenner, 2014). The developing trend of at-home binge watching produces difficulty in creating a realistic viewing environment within the lab, as issues with ethics and attention arise as a consequence of keeping participants engaged in a stimuli for an extended period of time, as binge watching requires (Babin & Carder, 1996). This study creates a more realistic viewing environment as the participants watch the series as they choose, enabling the possibility of binge watching. The rate in which participants watched the show was recorded and allows determination of whether or not



binge watching took place, creating the opportunity for future studies to compare the differences in memory between binge watching participants, and those that did not binge watch. This research is important as binge watching is a relatively new area of research, and existing literature on the topic is sparse (Moore, 2015). In this study binge watching was operationally defined as 3 or more episodes; past research on binge watching has also had inconsistency in its operational definition as it has been defined by some researchers as watching more than a single episode at a time, while others define it as high as 5 episodes in a row (Jenner, 2014, Matrix, 2014, Moore, 2015). The choice of 3 or more episodes was made to allow for comparisons between binge watching Netflix and movies, as 3 episodes of the television series on Netflix would be comparable to the length of a movie. A number of participants did binge watch within the experiment. Those who did binge watch episodes could be compared not only to themselves, such as whether memory was better or worse on episodes they did binge watch compared to ones they did not, as well as comparison to participants who did not binge any episodes. This is not a main focus of the current study and was not analyzed further; the data was however obtained and could be used for analysis in the future. Also, participants will be watching the entire series, whereas past studies have only used short clips of shows or movies as the stimulus, which is not realistic to a viewer's typical experience of product placements, which naturally occurs throughout a movie, or an entire television series (Gupta & Lord, 1998, Russell, 2002, Brennan & Babin, 2004).

Overall, product placement is not a new phenomenon either in use or research. The inclusion of brands and products into media and entertainment have been employed for at least over 150 years, both for a realistic touch by the artists and more recently for

financial gain for both products hoping to get an increase in sales from the placement and companies attaining either free props or payment for incorporating the brands. Although product placement is not a particularly new marketing practice, it is constantly adapting to the continuous changes in the way consumers view and interact with technology and entertainment media. Research needs to continue to advance along with the technology and placements in order to have a clear understanding of the impact of these placements. Research must be maintained as a result of new technology and programs, such as Netflix, which have unarguably “changed the game” for the way companies interact with their consumers. A standardized framework for determining the impact of product placements is still required and the current study aims to aid in this by testing a possible objective operational definition and also testing the impact of mode, to allow for improved comparisons within the literature and more objective pricing for companies to get their product displayed in a particular form of media.

#### Effect of prominence and mode on recall

In a study conducted by Gupta and Lord (1998) different types of product placement were distinguished based on two independent variables, mode (consisting of 3 levels, audio, visual or both) and prominence (prominent or subtle) (Gupta & Lord, 1998). Mode was defined based on the way the product was presented to participants, either by visual, audio, or both (Gupta & Lord, 1998). A visual placement entails the product was visibly shown on-screen, without any audible mention within the dialogue of the script. An audio placement was hearing mention of the product within the dialogue, without visually seeing the product presented on the screen. A combined audio-visual presentation, is most expensive for companies, occurs when both a visual sighting and

audible mention are used to present the product to the participant. The second independent variable, prominence, was determined by the degree to which the product presented captures the attention of the viewer. Prominence was deemed to have two levels, either prominent or subtle, a prominent presentation of a product was defined as a product being clearly visible on screen in such a position so that it is central to the plot of the scene. A subtle placement will present the product in a smaller portion of the screen, for a shorter duration of time, in the background of the scene, and possibly intermingled amongst other stimuli in which the product could be lost (Gupta & Lord, 1998). The dependent variable was recall, tested both aided and unaided for the product, the brand, and message detail (Gupta & Lord, 1998). Past studies such as this are helpful in providing justification and support for the current study. The need for clarifications comes from the fact that while the study considers various levels of prominence; it is done in a subjective way that differs from study to study. These variations in definitions could impact attempts to compare results.

Typically to determine prices for product placements informal and invalidated systems such as CinemaScore have been used (Sharkey, 1988). The issue with these types of systems is that they are developed simply by the use of surveys presented to viewers as they exit a movie theater (Sharkey, 1988). The system uses an unpublished formula that combines answers on these surveys, including demographic data (such as age and gender), product recall, where the responders watched the movie, and box-office success, to produce costs for product placement (Sharkey, 1988). Research and testing for validity however has not been done on this system and the reliability of this system is unconfirmed through objective measures (Sharkey, 1988). Therefore, prices for product

placements are commonly set based on the subjective impressions of viewers as well as the success of the program of interest (Sharkey, 1988). It has been suggested that requesting an increased visibility for a product can produce a higher price for the placement (Gupta & Lord, 1998). The literature suggests that there is an apparent trade off, while the visual mode of presentation is most commonly used, it also has the possibility of being unattended to by the viewer, while audio and visual presentation would benefit from the added audio reinforcement which would assist in drawing attention to the visual presentation (Gupta & Lord, 1998). It is this added benefit as well as an increase in difficulty on the movie producers to not only accommodate for a visual but also an audio presentation, or a script alteration, that makes this mode more expensive (Gupta & Lord, 1998, Russell, 2002, Cowley & Barron, 2008, Hong, Wang & Santos, 2008). A subtle level of prominence is less expensive for the company to purchase, with the potential for the product placement to fail to gain the attention of the viewer in such a way as to be worth the investment of the placement (Gupta & Lord, 1998, Russell, 2002, Cowley, & Barron, 2008, Hong, Wang, & Santos, 2008). Research has not been conducted in such a way to allow for any clear certainty in this suggested trade off of price and effectiveness, and Gupta and Lord (1998) sought to reduce some of the uncertainty. They tested the hypothesis that prominent product placements gain higher recall rates than subtle placements, which is based on the theory that the prominent placements attract more of the viewer's attention and the increased attention will result in better encoding and therefore better retrieval from memory (Gupta & Lord, 1998). The next hypothesis tested was that recall rates would be higher when products were presented in the audio mode than for visual mode placements of subtle prominence

(Gupta & Lord, 1998). A third hypothesis tested predicted that recall rates would be higher for audio-visual mode placements than for visual product placements. The justification for both these final two hypotheses is the dual-coding theory, which suggests that a single piece of information is encoded as two separate memory codes, a visual memory code and an auditory memory code, which should facilitate improved retrieval (Gupta & Lord, 1998).

The stimuli used in the Gupta and Lord study was thirty-second video clips from movies (Gupta & Lord, 1998). For the prominent stimuli, the clip was a scene from the 1988 movie “Big” which includes a Pepsi vending machine in the center of the screen. An object is thrown at the machine (plot integration) and the viewer then sees a full screen image of the machine dispensing a can of Pepsi; there is also a degree of plot integration with the product when the main character goes over to the machine and retrieves the dispensed can (Gupta & Lord, 1998). The clip for the subtle placement was from the same movie and includes the same two characters. At the bottom of the screen, out of the viewer’s central focus, is a Pizza Hut box; the pizza is not referred to or interacted with by the characters (Gupta & Lord, 1998). A second stimulus for a subtle placement was from the 1987 movie “Project X” in which a Pepsi logo can be seen on a cooler in the background over the shoulder of the main character (Gupta & Lord, 1998).

The Gupta and Lord (1998) hypothesis received support from the results as it was shown that there was significantly higher recall rates for prominent placements (90% unaided product recall) than that of both subtle placements (5.6% for Pepsi and 35% for Pizza Hut unaided product recall) (Gutpa & Lord 1998). It was these obtained results that the current study bases the prominence hypothesis from. The next hypothesis of the

Gupta and Lord (1998) study was also supported by results that indicated audio only (37.5% unaided recall) was recalled significantly better than subtle visual only (5.6% for Pepsi and 35% for Pizza Hut unaided recall) (Gupta & Lord, 1998). It is these results in support of the hypothesis in which the current study uses as a basis to hypothesize the beneficial impact of audio mentions (Gupta & Lord, 1998). The final hypothesis of Gupta and Lord (1998) predicted that an audio-visual placement would outperform a visual only placement was not supported, as recall between the two were not significantly different (unaided product recall 100% for audio-visual and 93.8% for the prominent Ferrari visual only) (Gupta & Lord, 1998). It was this unexpected result, which leaves a requirement for further research, and the current study in particular which hypothesizes, as Gupta and Lord (1998) did, that audio-visual will outperform visual only. The issue with these results also comes from the choice of the placement for the visual only when comparing visual and audio placements. Had the audio-visual (100% unaided recall) been compared to the other prominent placement used in the prominent versus subtle comparison (placement was Pepsi receiving 90% unaided recall) or had it been compared to either of the subtle placements (5.6% for Pepsi and 35% for Pizza Hut unaided recall) it is possible that the results would have shown a significant difference.

#### The role of modality and plot connection on memory

In a 2002 study by Russell, product placement was investigated based on whether it was presented as visual or audio, as well as the impact of the degree of connection the placement has to the plot (Russell, 2002). The independent variables were modality with 2 levels (audio or visual) and plot connection with 2 levels (lower or higher) (Russell 2002). The dependent variables of interest for the Russell (2002) study were recall, and

recognition of the brands in the product placement (Russell, 2002). The study used a theater methodology in which 3 versions of a play were written and filmed specifically for the research, they were made with varying products placed within the play and each play was 27 minutes long (Russell, 2002). Visual placements had a duration of approximately 5 seconds, audio placements were mentioned within the script twice, and plot connection was given the operational definition of the extent of linkage between the product and the plot of the story (Russell, 2002). The hypothesis predicted, first, that higher plot visual placements will be remembered better than lower plot visual placements, but the level of plot will not affect memory for the audio placements (Russell, 2002). Results supported the hypothesis, and showed main effects and an interaction for both modality and plot connection (Russell, 2002). Audio placements had better recall than those of visual only ( $\text{Audio}_{\text{highplot}} = .766$ ,  $\text{Audio}_{\text{lowplot}} = .738$ ,  $\text{Visual}_{\text{highplot}} = .551$ ,  $\text{Visual}_{\text{lowplot}} = .056$ ) (Russell, 2002). These results were used to justify the hypothesis of the current study on prominence: higher prominence will have higher memory rates, as well as mode having an effect on memory as audio only proved to have higher recall rates than visual only (Russell, 2002). As well, the Russell (2002) study advocates for the need for operational definitions as the Russell (2002) study uses 'plot integration' to refer to prominence and is therefore difficult for comparing to other studies. The issue of inconsistency is what the current study aims to assist in reducing.

#### Brand placement recognition revisited

The purpose of a Brennan and Babin (2004) study was to attempt to provide some clarity to the conflicting results reported by the Gupta and Lord (1998) study that gave directional support, but it was not statistically significant (Gupta & Lord, 1998). Brennan

and Babin (2004) suggested flaws in Gupta and Lords design (the stimulus used). They believed it was poor stimulus choice that was the reason for the conflicting results in the 1998 Lord and Gupta study. Brennan and Babin felt that one of the most damaging flaws of the stimulus used was the choice of stimulus to use for the audio-visual versus visual only hypothesis. There was only visual only stimulus selected, a Ferrari, which Brennan and Babin felt was such a luxury item that it was extraordinarily memorable and that this skewed the results of the experiment. They felt the product in the stimulus used was too obvious and impressive that it would attain more attention from viewers than other more typical placements. They argued this resulted in a ceiling effect of the visual only results as well as making the result incomparable to the other product placements (less luxurious items such as Pepsi, or Pizza Hut), which might have had different (possibly significant) results (Brennan & Babin, 2004). Also, participants were not presented the movie in its entirety, and instead, only a short clip from the movie, which presented the product in such a way Brennan and Babin suggests removed any distracting plot or movie content from before or after the presentation of the placement and suggested this could therefore result in higher attention, better encoding and therefore better memory (Brennan & Babin, 2004). As well, Brennan and Babin in their 2004 study hoped to clarify the contradicting results from their own earlier study in 1999, which had a confound when comparing audio-visual to visual only. The issue was similar to that of the issue in the Gupta and Lord study, as again the prominence of the visual only clips were not consistent and differed from that of the prominence level of the audio-visual (Brennan & Babin, 2004). Resulting in the visual only stimuli being more prominent than the visual component of the audio-visual stimuli.



The independent variables were placement (prominence), which had 2 levels, creative (subtle) or on-set (prominent); the second was whether or not the products had an audio reference (Brennan & Babin, 2004). The dependent variable was memory, measured by recognition. The hypothesis tested was that recognition would be higher for prominent audio-visual placements, than for prominent visual placements (Brennan & Babin, 2004). The stimulus was one of two whole movies; participants were randomly assigned to either Rocky III (n=54) or Rocky V (n=44). Coding of each movie was done through two judges, an audio-visual specialist and a marketing professor, to ensure consistency of prominence between the placements that would be compared (Brennan & Babin, 2004). A 'Wheaties' placement was selected as the audio-visual stimulus and it had a screen time of 8.17 seconds and was compared to the Caesars Palace visual stimulus that had a total screen time of 9 seconds (Brennan & Babin, 2004). Also, a Madison Square Garden audio-visual placement of 5.17 seconds was selected and compared to a Radio City Music Hall visual only placement with a screen time of 5 seconds (Brennan & Babin, 2004). Recognition was measured by a questionnaire which asked questions such as "Did you see or hear references to any of the following brands in the film you just saw?" followed by 74 brands and participants were given the option to circle either "yes", "no", or "not sure". The results supported the hypothesis with the audio-visual placements (both audio-visual placements obtaining 87%) were significantly different than those of the visual only placements (obtaining 67%, and 35%) (Brennan & Babin 2004).

These results serve as a basis for the current hypothesis that higher levels of prominence result in better memory, and that the addition of an audio mention improves

the viewers' ability to remember the products they had been exposed to during the clips.

The Brennan and Babin (2004) study shows the issue with a lack of a consistent operational definition within the literature. One goal of the Brennan and Babin (2004) study was to try and explain, by way of a ceiling effect, the results of the previous Gupta and Lord (1998) study in regards to the impact of an audio mention, however Gupta and Lord (1998) used the terms prominent and subtle, while Brennan and Babin (2004) used on-set (prominent) and creative (subtle) (Gupta & Lord, 1998, Brennan & Babin, 2004). It can be difficult to be confident in comparisons when studies use varying terms and definitions, which gives further justification for the need for the current study (Gupta & Lord 1998, Brennan & Babin, 2004).

This issue with prominence equality among the visual only and the audio component of the audio-visual stimulus is one that needs to be addressed within research. However to properly and thoroughly rectify is beyond the scope of the current research's aim. The current study is aiming to first verify the levels of prominence based on the company's levels. Our hypothesis about the audio-visual benefit and hope to add to the literature in support for this and the theory behind it that is explained as follows. However due to the novelty of the coding, and the novelty and lack of control in our methodology of natural viewing environment we conclude this first study to act as gaining preliminary empirical evidence for the audio only and visual only comparison. We chose to first obtain results from our own study on which has an advantage, (visual only or audio only) without making hypothesis. Our results will add to the existing literature and we can build upon our own results to make hypothesis in future studies as opposed to basing hypothesis' off past, dubious results.

Dual-coding theory

The theory behind the hypothesis of the current study and those of previous research on mode of presentation is the dual-coding theory (Unnava & Burnkrant, 1991, Russell, 2002, Brennan & Babin, 2004). This theory suggests that audio and visual information are processed differently, encoded differently, and are stored, at least initially, in separate ways (Paivio, 1991). This idea of an impact from mode applies to dual coding in that it suggests that with a greater number of memory codes act as multiple retrieval routes to that information retrieval will be easier (Paivio, 1991, Unnava & Burnkrant, 1991, Russell, 2002, Brennan & Babin, 2004). Meaning that having both an audio mention and a visual sighting of the product allows for the information (the product) to be encoded and processed by the viewer twice, once visually and once by auditory (Paivio, 1991, Unnava & Burnkrant, 1991, Mousavi, Low, & Sweller, 1995, Russell, 2002, Brennan & Babin, 2004). Then when a participant is asked to retrieve from memory the information (the product) they have two memory codes and two pathways of retrieval for that information (Paivio, 1991, Mousavi, Low, & Sweller, 1995, Unnava & Burnkrant, 1991, Mousavi, Low, & Sweller, 1995, Russell, 2002, Brennan & Babin, 2004). This theory is supported by research that has shown the likelihood of retrieval can be related to the number of alternative retrieval routes in memory (Paivio, 1991). As well, as results from previous research that supports a proposed advantage for memory when placements have an audio reference as well as visual sighting (Gupta & Lord, 1998, Mousavi, Low, & Sweller, 1995, Russell, 2002, Brennan & Babin, 2004).

Prominence offers better processing opportunity

The theory behind prominence having an advantage over that of more subtle placed products is that characteristics that make something more prominent, i.e. size, and time on screen give the viewer a better opportunity to process and encode the placement. It is this opportunity for better encoding and processing that is suggested to result in better retrieval (Bressound & Russell, 2010). The degree or extent to which a placement possesses these characteristics will present the viewer with a greater opportunity to encode. Higher degrees of factors such as size on screen, length of time on screen, and proportion of product or logo visible should theoretically give the viewer a better chance to attend to, process and encode the product (Bressound & Russell, 2010, Kozary, & Baxter, 2010). This opportunity should allow for the better encoding and as a result better storage of the information and memory of being exposed to the product. As a result when it comes time for them to remember the product they should as a consequence of the better encoding have an easier time retrieving it from memory (Bressound & Russell, 2010, Kozary, & Baxter, 2010).

Hypothesis

For the current study the first hypothesis is that prominent product placement will obtain higher recall and recognition rates than that of subtle product placement. The justification for this hypothesis is the results from past studies such as Gupta and Lord (1998) showing that the level of prominence has an influence on the viewer's explicit memory, and the theory that higher levels of prominence offer an opportunity for better encoding (Gupta & Lord, 1998, Russell 2002, Brennan & Babin, 2004, Law & Braun, 2004, Homer, 2009). The second hypothesis is that products presented in the mode of both a

visual and an audio mention within the show will obtain higher recall and recognition rates than that of either mode on its own (visual only or audio only). The justification for this hypothesis is support from past research, and the dual-coding theory suggesting the encoding by both modes together of the product will increase (Paivio, 1991, Mousavi, Low, & Sweller, 1995, Unnava & Burnkrant, 1991, Mousavi, Low, & Sweller, 1995, Russell, 2002, Brennan & Babin, 2004).

### **Methods**

#### **Independent Variables**

The independent variables of the current study are derived from the coding system developed and provided by the marketing company, Concave Brand Tracking. The company examined the first season of the Netflix series House of Cards and used a spreadsheet to code a number of factors of product placement. Factors included, level of prominence, type of product, mode of presentation, setting, etc. The current study will focus on two of these factors, prominence and mode of presentation, which were selected to be the independent variables. The coding of the levels of prominence was done by the company itself and was based on screen proportions and the intent behind the placement (Kamleitner, & Khair Jyote, 2013, Devlin, & Combs, 2015). For example when differentiating between discreet and subtle, in both levels the brand is present in the foreground of the shot, the difference being for a discreet placement only part of the product is visible. While the difference between obvious and close up rely both on whether the product occupies more or less than  $\frac{1}{4}$  of the screen and whether the product is shown in an obvious way.

The first independent variable is the factor of mode of presentation, which has three levels. Audio, in which the stimulus is presented to the viewer by a mention of the product within the dialogue of the show. Visual, in which the stimulus is presented to the viewer by showing the product on screen. Both, in which the stimulus is presented to the viewer by an audio mention heard and the product being seen visually on the screen.

The second independent variable is the factor of prominence, which has five levels each with a consistent operational definition developed by Concave Brand Tracking. Background, in which the product is identifiable but not at the forefront of the shot. Discreet, in which it is unlikely the viewer will be aware of the product but the brand is still present and in the foreground of the shot. The product occupies a small part of the screen and/or only part of the product is visible. Subtle, in which the product is used at the forefront of a scene but is not being shown in an obvious way. Obvious, in which it is clear the purpose of the shot is to show the product however it does not occupy  $\frac{1}{4}$  or more of the screen. Finally, close-up, in which the product occupies  $\frac{1}{4}$  or more of the screen. (Appendix A) Definitions were determined by the criteria of foreground versus background, with background being the only level presented in the background of the shot. As well as proportion of screen occupied by the product and intention of the shot, i.e. is the product presented in an obvious way with the objective of the shot being to present the product to the viewer. Determinations of these criteria were done by the coder and company creator Dominic Artzrouni. While this does create a somewhat subjective element to these definitions that is why the company has requested we test them to validate.

### Dependent Variables

The dependent variable is memory, which has two levels, the first being recall. This will require participants to retrieve the information necessary for the correct answer from memory without any assistance or cues. This will be tested by fill in the blank questions where a question is posed and participants must type in the answer into a designated text box below with no options to choose from (Appendix B). Recall was selected as it has been frequently adopted as measure for product placement research (Babin & Carder, 1996, Gupta & Lord, 1998, Homer, 2009).

The second level of the dependent variable is recognition, as it has also been used as a typical way to test product placement (Brennan & Babin, 2004, Boundless, 2015). This will require the participant to judge for familiarity, as the correct answer will be presented amongst distraction answers. This will be measured using multiple choice questions in which participants must select the one correct answer presented along with three possible answers that are incorrect (Appendix C). A question will be posed with four possible answers provided below, with the correct answer and three wrong, distractor answers. Recognition has been shown to be easier and have higher rates than recall so we are using recognition incase of a floor effect for recall (Haist & Shimamura, 1992, Tulving & Watkins, 1973, Boundless 2015).

Memory was selected as a dependent variable because it has been used often in research of product placement (Auty & Lewis, 2004, Brennan & Babin, 2004, Babin & Carder, 1996, Gupta & Lord, 1998, Homer, 2009). This is due to the notion that when testing effectiveness of product placement it is important for there to be some element of recall ability of the products, as well as to test the relationship, if any, between explicit

memory and implicit choice (Campbell & Kirmani, 2000, Bhatnagar, Aksoy, & Malkoc, 2004, Yang & Roskos-Ewoldsen, 2007).

### Participants

The participants used were 34 undergraduate Laurentian University students (9 males and 25 females) with normal to corrected to normal vision. There was a mean age of 20.91 with a range of 18-44. With the exclusionary criteria that participants must have access to the use of Netflix in order to access and watch the series. Participants were recruited in classrooms at Laurentian University after permission had been given to the researcher by professors. Also by advertisement through social media such as the Facebook pages: Psychology @ LU and LUPS-ULSP, Twitter and the Cognitive Health Research Laboratory website (<http://laurentian.ca/coglab/>), and through the booking tool <https://erpcoglab.youcanbook.me>. Emails were also sent to participants from a database collected by the Laurentian University Cognitive Psychology Lab, which has the email addresses of students who have expressed interest in being contacted for research participation opportunities.

### Materials

The stimulus in the current study was the Netflix original series House of Cards, which participants were instructed to access and view on their own. Materials also included the coding system that was provided by the marketing company, Concave Brand Tracking. House of Cards was a good selection by Concave Brand Tracking to use as the show this study due to its high degree of plot complexity. The show has a very intricate plot; this requires viewers to continually attend throughout episodes in order to follow the storyline. This characteristic of the show could lend itself to be



beneficial for product placement due to the possibility participant's will have a higher level of attention, as opposed to a show that could allow for a more passive viewing experience such as a comedy (Russell, et al., 2006). It is also a popular show with a wide viewership, adding to its value as it offers a wide range of consumers.

The memory task was online and issued to participants via email of a link, which took them to the task. Each task was composed of both brand and distraction questions, this was done with the aim of preventing participants from determining the true purpose of the study, being the memory of the brands, as opposed to the cover story which was simply a relationship between memory and Netflix. Distraction questions asked about ambiguous stimulus along similar levels of the prominence of the brand questions. For example brand questions would ask about brands of soda or laptops in the background while a distraction would ask about the type of fruit or colour of a mug in the background. Due to variability of the number of product placements and length of each episode the tasks were individually and specifically created for each corresponding episode, and are therefore not all identical, however questions were as equal as possible working with what was available (Appendix D). There were less audio-visual questions asked due to a lesser amount of placements to base questions on, however this is backed by research which has shown there are typically less audio-visual and audio only placements (Bressound & Russell, 2010). This could be due to the difficulty required in incorporating audio into the show, for example it is much easier to simply place a product in the background of a shot as opposed to attempting to as seamlessly as possible incorporate it into the script (Ferraro, & Avery, 2000, Bressound, & Russell, 2010).

When developing the memory tasks brand familiarity was a factor considered as past research has done more extensive investigation and found some possible effects (Holden, & Vanhuele, 1999, Russell, 2002, Brennan, & Babin, 2004, Van Reijmersdal, E. 2009). It is not the focus of the current study but was mediated as a precaution. The series used in the current study, House of Cards, has a wide variety of products placed within it, ranging from inexpensive and familiar Coca-Cola, to expensive and lavish IWC watches. It is reasonable to assume these two products would not benefit from the same amount of brand familiarity by undergraduate students. Therefore this possibility of effects of brand familiarity was addressed by testing within the Cognitive Health Psychology Lab the products included in the show to see which products had similar familiarity to ensure we asked questions about products that had similar levels of brand familiarity with our demographic group. This was to prevent false negatives, which would be participants failing to recall a product not because they did not process, encode or remember the exposure to the products, but because they did not know the product or recognize it as product. For example, an expensive IWC watch, a participant may easily process, encode and remember seeing the watch, however because the brand is unfamiliar they may not be able to recall the brand. As a result many questions revolved around electronics (cellphones, laptops, TV's), this is however consistent with past research that typically these are the most typical products that use product placement (Bressound & Russell 2010).

### Procedure

Participants once recruited were confirmed to have access to Netflix, this was in order to make sure they could access the series used as the stimulus. They were then sent

the demographics' form via email (Appendix E), which for the purpose of the study requested age, gender, and vision. The email also contained the informed consent form which participants were instructed to read, sign and return electronically (Appendix F). As well participants were prompted at the beginning of each memory task to again read and accept, by checking a box, the informed consent electronically (Appendix G).

Participants were instructed to watch the entire first season of the Netflix original series House of Cards within a two-week period, however participants who exceeded the two week time period were retained and included in analysis. The average number of days for participants to watch the series was 12.5 days with a range of 2-29. An analysis was done to ensure no correlation between length of time to complete the series and accuracy on the memory task, no correlation was found (Appendix H). The series participants viewed is composed of 13 episodes each approximately 1 hour in length. Beyond the requested two-week time period no further instructions or requirements were given to participants on how they were to watch the show. This meant they could watch whenever and however they wanted in the hopes they would watch the series according to their typical viewing habits. Participants were provided with a log sheet to fill out along with the viewing of each episode in order to provide the experimenter with an idea of their viewing environment conditions (Appendix I). Upon completion of each episode participants emailed the researcher requesting the link for the corresponding online memory task. Visual inspection shows very little variability between when the log sheet shows they completed an episode and when they emailed requesting the link for the online memory task. The program that runs the online memory tasks also provided times for when the participant began and completed each tasks. So analysis was done instead

with the data provided by the program as opposed to that on the log sheet as data provided from the program would be more reliable. Average times between request for link and completion of tasks are summarized below (Appendix J).

Upon completion of the experiment all data was exported from the website hosting the online memory task (redcap.laurentian.ca). The memory tasks were marked and scores were devised as proportions based on the number of correct answers per category divided by the number of questions per category in total. Brand and distraction questions were separated and the categories were each mode (audio, visual, both), and level of prominence (background, discreet, subtle, obvious, close up) and separate scores were calculated for both recall and recognition.

## **Results**

### **Prominence**

Accuracy rates were analyzed for the different levels of prominence with a 2 x 5 repeated measures ANOVA with 2 types of memory (recall and recognition) and 5 levels of prominence (background, discreet, subtle, obvious, close-up). This is a within subjects design as all participants were exposed to all levels of prominence. An alpha level of .05 was used. Results for level of prominence and memory showed a significant main effect of level of prominence  $F(4,132)= 9.03, p < .05, \eta^2 = .22$ , as well as memory type  $F(1,36)= 4.23, p < .05, \eta^2 = .11$ . However these main effects will not be discussed further due to the fact that they are involved in a significant interaction  $F(4,132)= 3.55 p < .05, \eta^2 = .10$  (Appendix K, figure 1). Results support the first hypothesis as they indicate a general trend that as level of prominence increased so too did memory of exposure to the product.

### Mode of presentation

Accuracy rates were analyzed for the mode of presentation with a 2 x 3 repeated measures ANOVA with 2 types of memory (recall and recognition) and 3 modes of presentation (visual only, audio only, and audio-visual together). It was a within subjects design as all participants were exposed to the all modes of presentation. An alpha level of .05 was used. Results for mode of presentation and memory showed a significant main effect of mode of presentation  $F(2,66)= 181.16$   $p < .05$ ,  $\eta^2 = .85$ , as well as memory type  $F(1,33)= 104.02$ ,  $p < .05$ ,  $\eta^2 = .76$ . These main effects will not be discussed further due to the fact that they are involved in a significant interaction  $F(2,66)= 71.70$ ,  $p < .05$ ,  $\eta^2 = .69$ . Within both recall and recognition memory rates for all modes were significantly different (Appendix L, figure 2). In support of the second hypothesis, results indicated that audio and visual combined was significantly different than either mode on its own. Audio only and visual only were also significantly different from one another with audio obtaining higher recognition rates than visual only, however, visual only obtained higher recall rates.

### Discussion

Results supported the prediction of the first proposed hypothesis, that prominent product placements would obtain higher recall and recognition rates than subtle product placements, indicated by the overall significant differences between nearly all levels of prominence. These differences, as expected, present themselves in an increasing direction. The expected trend was found that as the level of prominence increased, the accuracy of participant's memory improved. These results support both past researches findings and the current hypothesis, which predicted that the level of prominence impacts

memory, and does so advantageously. It is likely the increase of memory was a result of the increased amount of screen occupied, increasing the likelihood that viewer's attention will be drawn to the product. Likewise, an increased level of prominence provides the viewer with a better opportunity to process, encode and store information (Bressound & Russell, 2010, Kozary, & Baxter, 2010).

The second hypothesis of the current study predicted that products presented in the mode of both a visual and an audio mention would obtain higher recall and recognition rates than that of either mode on its own (visual only or audio only). This prediction was also supported by the results. Audio and visual together was significantly different than either mode on its own, in support of past research, our hypothesis, and the theory that dual coding allows for the creation of two mental codes which results in better memory (Paivio, 1991, Unnava & Burnkrant, 1991, Russell, 2002, Brennan & Babin, 2004).

When drawing conclusions from the current study, it is important to note the changes we made to the methodologies used in past research. The current study employed a novel natural viewing environment, the online memory task, and the watching of an entire series. Past research has typically had participants view the stimulus within the lab, with the stimulus typically in the form of short clips, such as Lord and Gupta in 1998 which used 30 minute movie clips, and Law and Brawn 2000 study which used 10 minute clips of a TV show (Lord, & Gupta, 1998, Law, & Braun, 2000). Others have used other methodologies, such as Russell in 2002, which used a theater setting and developed their own stimulus, creating a screenplay and producing it so they could place the products as they wished within the stimulus. The final stimulus was a 27-minute video of the play

(Russell, 2002). In all studies the memory tasks followed immediately after viewing the stimulus (Lord, & Gupta, 1998, Law, & Braun, 2000, Russell, 2002).

It is possible these forced conditions of past research (which provided unrealistic interactions with the product placements) could have been the factor that resulted in an increase of memory. For example with the use of 10 or 30-minute clips, which have been edited to present just the placement with minimal plot and distractions, participants are immediately tested for recall after viewing, which could have bolstered their memory, and the study results. It is important to bring up these differences in methodologies and the possible implications they have in order to point out that, despite these differences, past research and the current study have consistent and mutually supportive results. This support, despite the differences, suggests that there is an effect as a result of prominence and mode of presentation as these effects consistently appear regardless of the methodological differences and possible extraneous variables.

There were two interesting findings in our results that had no prior hypothesis to be compared to but are worth mentioning. First, within mode of presentation, results indicated significant differences between the audio only and visual only stimulus. Results showed that the audio only condition had significantly better recognition than visual only, yet visual only had significantly better recall than audio only. Despite having not hypothesized about the relation between audio only and visual only, these results are in accordance with past results found in a Law and Braun 2000 study. Law and Braun found that for recall visual only (20%) had better rates than audio only (9%) while for recognition audio only (54%) resulted in better rates than visual only (37%) (Law, & Braun, 2000). The suggested explanation for these findings was based on the idea that the

type of memory corresponds with the type of mental code (i.e. recall type questions are better for visual mental codes) (Law, & Braun, 2000). Additional research may suggest there is some merit to this theory. Research has suggested a relationship between auditory input and left-hemispheric dominance, and a visual input with right-hemispheric dominance. This relationship suggests that the different modes activate different hemispheres, and that hemisphere is more activated and involved in the encoding and processing of that specific mode (Zenhausern, & Gebhardt, 1979). When this is taken together, with findings that suggests right hemispheric processing dominance is better suited for recognition type memory questions, while recall benefits from a left-hemispheric processing, hemispheric laterality may provide a physical mechanism that is capable of explaining the findings of past research and the current study (Krugman, 1977). Future imaging studies could look into the differences in hemispheric activation with various forms of questions, such as those that require recall compared to those requiring recognition.

The audio only condition advantage over visual only has also been found in past research, such as that of Russell (2002). In this study results demonstrated that audio only had better recall performance than visual only product placements, in both lower and higher prominence levels. The possible explanation for this audio advantage, suggested by Russell, was that audio is more meaningful (Russell, 2002). This suggests that visual placements merely make up the background setting for the show, and that once the viewer has seen this and established the setting they no longer need to give it any further or deeper attention, and instead focus primarily audio information. The audio is what delivers the script and it is driver of the plot, therefore requiring the audience to focus



additional attention and cognitive resources, and therefore is more meaning to them than visual information (Russell, 2002). This results in a product that is mentioned, according to Russell, to benefit from this more meaningful relationship established between the audio and the viewer. This type of explanation could apply in the current study, as a consequence of the natural viewing environment used. The natural viewing of the current study did not have participants controlled within a lab, therefore they could have easily been distracted or divided their attention between watching the show and additional stimuli, such as a conversation with another individual present in the room or the answering of a cell phone. This could have caused participants to miss some of the visual only placements that were presented; yet they would still be listening to the show. Although it is possible to turn our eyes away from the screen and yet still follow the plot of a program, it is much more difficult to disengage our ears from the audio of the show and maintain a cohesive understanding of what is happening through the course of the program. Therefore, it is possible that viewers are more likely to attend to and encode audio mentions of products.

### Limitations

The main limitation of the current study that must be acknowledged, and considered when both interpreting results, and moving forward with future directions, is the viewing environment provided to our participants. It was a struggle to balance a strong scientific methodology while fulfilling the wishes of the Concave Brand Tracking Company that provided the product placement coding of the series. The company has requested the coding be tested, and that it be done in the most realistic way possible. This means having participants interacting with the product placement in a natural viewing

environment, as they would in real viewing of the show. This was a requirement for allowing the results to be applied in the marketing world and having optimal generalizability. Allowing our participants to view the entire series outside the lab was not the ideal methodology for rigorous scientific research, and it puts a limit on the control of a number of variables, however, this is the type of information real industry marketers are interested in, according to the providers of the coding system, Concave Brand Tracking. While the current study was able to provide the company with the information that was requested, it must also be acknowledged that the limitation the viewing environment could have on the experiment and results. However, to combat this limitation there is a sister study being conducted in our laboratory (Cognitive Psychology Lab), using the same coding system and memory task following the viewing. This experiment has participants watching only a single episode of the series, in the laboratory setting, with the use of an eye tracking apparatus to allow for recording of their eye movements and fixations on the screen. As this sister study uses the same memory task following the episode, once the study is concluded it will be possible to compare the result on the memory tasks between a laboratory setting and a natural at-home viewing environment. This has the potential to show that if there are any significant differences in memory of the brands, it could potentially be attributed to the differences in viewing environment. Which could potentially demonstrate that real-world practical marketers should or should not be relying on the results that have been demonstrated by previous studies in a rigorously controlled laboratory setting for accurately determining the value of their product placements.

A possible concern arising from the more realistic interaction, as with any

laboratory experiment, is that becoming aware of the true purpose of the study could have impacted the participant's memory results. Participants were required to watch an entire series, 13 episodes, which meant they were asked to complete 13 memory tasks. Past research typically uses short clips or a single movie, with one memory task to follow. This short interaction with the stimulus, and short delay between viewing and testing, could limit participant's ability to identify product placement as the true purpose of these studies, although it also has the potential for increasing the probability of participants becoming aware of the intention of the experiment, due to a decreased number of distracting irrelevant stimuli. The current study has participants interacting with the stimulus for a longer period of time, as well as completing multiple memory tests, and this prolonged interaction could result in the true purpose being determined. In an attempt to check for this impact, analysis was run on the participant's accuracy on memory tasks across the series. Results showed no significant difference in percent of correct answers between the first half and the second half of the series (Appendix M, figure 3), suggesting that the majority of participants did not become aware of the intention of the experiment, and did not intentionally attend to product placements while watching the program.

As a limitation of allowing participants to go home and watch the show freely, there was the difficulty of attempting to ensure the series was completed within the 2 week time period we had requested. To retain enough participants to attain a reasonable statistical power, those who exceeded the two-week time frame were included in the analysis. An additional analysis was run in order to check for any correlation between length of time to complete the experiment and accuracy on the memory tasks. Results indicated accuracy was not significantly correlated to the length of time it took

participants to complete the series (Appendix H), suggesting that increasing the time between episodes did not improve or decrease the ability of participants to recognize or recall product placements.

### Implications

Despite the notable limitation that was presented from the naturalistic viewing environment, it allows for considerable real world implications. Typically, in the current model of pricing for placements there is a tendency to stipulate prices and placement contracts on audience sizes (Pokrywczynski, 2005, Soba, M., & Aydin, M. 2013). Determining prices and contracts on the basis of audience size only relies on the assumption that placements will attain the same amount of exposure regardless of how they are placed within the show. This assumption entirely discounts the importance and potential impact of factors such as prominence and modality. This as a consequence, has continued to leave pricing as a rather vague concept within the product placement industry (Pokrywczynski, 2005, Soba, M., & Aydin, M. 2013). As a result of research such as the current study, evidence is provided that audience size should not be the sole indicator of the exposure that a placement can be expected to obtain. It suggests instead that other factors, such as prominence and modality, may be much more appropriate indicators of potential exposure and possibly profitable memory.

The current study also suggests that even within a single show, not all placements are, or will, obtain the same attention or exposure from viewers, again making audience size an inadequate determining factor for the value of a particular product placement. As well, when it comes to the actual placing of the products in the show there appears to be a discrepancy in memory forming power. There is extremely limited input, if any, by the

company as to how their product will be placed, portrayed, or incorporated within the show. While it is understandable that producers must make a show that maintains natural flow while incorporating these brands, results such as these provide companies a leg to stand on to seek more control over how their products are placed, or at least variation in prices based on these factors of the placement they receive. The results suggest not all placements are created equal, and the process and contracts of placements should reflect this. Allowing companies more control of the location of their product in the show may potentially complete this, or decreased costs for the companies for lower level prominence and more product placements.

#### Future Directions

A next step in this field of research that could be beneficial would be working on the control issues of the natural viewing environment. Future studies could attempt to combine more scientific methodology aspects with the natural viewing environment, such as that used in the current study. This would be an improvement for the field of study and the current study, it would be beneficial to add more control over the environment of the participants and be able to control for a number of the variables the current study could not, such as possible distractions like additional technology use such as texting, which could have divided the participant's attention away from the task of watching the show. However it is also beneficial to have participants interact with the product placement in the most realistic way possible in order for results to be optimally useful and generalizable for real world marketers. Future studies could conduct a very similar study to this, but with the use of something like renting a residence room and then bringing participants into the room and allowing them to watch the show naturally. This could

allow for the addition of control groups for variables such as divided attention by taking cell phones away from one group but allow another to take their phones with them and record both whether or not they used their phones while watching the show and also, if they do use them, is there a difference in accuracy or memory results compared to participants who did not use their cell phone. These results would improve the literature and allow for the accumulation of evidence as to whether or not the results of this study might have been affected by such uncontrolled variables, or if such variables have a significant impact.

Another future step in improving this field would be coding for different levels of mode. Currently mode has not been coded for different levels of prominence. This has caused issues in past research results, for example the Lord and Gupta study, which Brennan and Babin pointed out had issues as a result of comparing too prominent a visual only placement to an audio only placement that a ceiling effect occurred (Lord & Gupta, 1998, Brennan & Babin, 2004). As a consequence of mode not being coded there is the risk of a subtle visual and obvious visual being compared to a subtle audio. This could affect results in that a subtle visual compared to a subtle audio might result in an audio advantage, whereas an obvious visual compared to a subtle audio could have results of a visual advantage. The issue being, the visual advantage could possibly been a result of the higher degree of prominence, and not the modality itself. Coding mode so that there could be a prominent audio and a subtle audio would allow for better comparisons between audio only and visual only. It would allow researchers to ensure the comparisons are equal and neither mode is benefiting from a higher degree of prominence. An example from the series we used, House of Cards, could be, an obvious audio would be a

main character saying the name of a brand or product, while a subtle could be the distinct iPhone ringtone in the background. This type of coding could help clearly determine which mode, on their own, is better, or if there is a difference as level of prominence changes, such as whether or not there a point where audio over takes visual as beneficial.

Bressound and Russell, in their 2010 study, found that one factor to impact recall was screen size (Bressound & Russell, 2010). This could be an interesting factor to investigate as technology continues to advance and more avenues, with smaller screens, become available for viewing entertainment media, (such as Ipads, tablets, and phones). It is understandable that a small background placement would suffer from being viewed on the small screen of a smartphone. As a result of the use of the log sheets participants filled out about their viewing environment, the current study has information pertaining to the device participants used to view the series, and could then generate groups for screen size and run additional analysis. If there are any significant differences for screen size from these results, they could be used as a platform to justify future studies, which could assign groups different sizes of screen.

### Conclusion

In conclusion, it is important to note that we used a novel and less rigorous methodology by allowing participants to watch in a natural viewing environment. Despite the new methodology provided results that are consistent with past research and supported the hypothesis put forth by the current study. Results supported the theory that mode of presentation and level of prominence have an impact on a viewer's ability to remember the product they were exposed to within the show. The results of the study suggests as the product's level of prominence increases, memory of the product increases

as well. This is presumably due to the fact that an increase in level of prominence provides the viewer a better opportunity for processing and encoding. Additionally, results indicate that there is improved memory for products with a combined mode of presentation, hypothesized based on dual-coding theory. Our results lend support to our hypothesis and the dual-coding theory, which suggests that two mental codes for one piece of information aids in memory of the exposure.



### References

- Alba, J. W., & Chattopadhyay, A. (1986). Salience effects in brand recall. *Journal of Marketing Research*, 363-369.
- d'Astous, A., & Chartier, F. (2000). A study of factors affecting consumer evaluations and memory of product placements in movies. *Journal of Current Issues & Research in Advertising*, 22(2), 31-40.
- d'Astous, A., & Seguin, N. (1999). Consumer reactions to product placement strategies in television sponsorship. *European journal of Marketing*, 33(9/10), 896-910.
- Babin, L. A. (1996). Advertising via the box office: Is product placement effective?. *Journal of Promotion Management*, 3(1-2), 31-52.
- Babin, L. A., & Carder, S. T. (1996). Viewers' recognition of brands placed within a film. *International journal of advertising*, 15(2), 140-151.
- Bhatnagar, N., Aksoy, L., & Malkoc, S. A. (2004). Embedding brands within media content: The impact of message, media, and consumer characteristics on placement efficacy. *The psychology of entertainment media: Blurring the lines between entertainment and persuasion*, 99-116.
- Boundless. "Memory Retrieval: Recognition and Recall." Boundless Psychology. Boundless, 27 Aug. 2015. Retrieved 09 Sep. 2015 from <https://www.boundless.com/psychology/textbooks/boundless-psychology-textbook/memory-8/step-3-memory-retrieval-56/memory-retrieval-recognition-and-recall-220-12755/>
- Brennan, I., & Babin, L. A. (2004). Brand placement recognition: The influence of presentation mode and brand familiarity. *Journal of Promotion Management*, 10(1-2), 185-202
- Brennan, I., Dubas, K. M., & Babin, L. A. (1999). The influence of product-placement type & exposure time on product-placement recognition. *International Journal of Advertising*, 18(3), 323-337.
- Bressoud, E., Lehu, J. M., & Russell, C. A. (2010). The product well placed. *Journal of Advertising Research*, 50(4), 374-385.
- Burkhalter, J. N., & Thornton, C. G. (2014). Advertising to the beat: An analysis of brand placements in hip-hop music videos. *Journal of Marketing Communications*, 20(5), 366-382.

- Cabeza, R., Kapur, S., Craik, F. I., McIntosh, A. R., Houle, S., & Tulving, E. (1997). Functional neuroanatomy of recall and recognition: A PET study of episodic memory. *Journal of Cognitive Neuroscience*, 9(2), 254-265.
- Chan, F. F. Y. (2012). Product placement and its effectiveness: A systematic review and propositions for future research. *The Marketing Review*, 12(1), 39-60.
- Cowley, E., & Barron, C. (2008). When product placement goes wrong: The effects of program liking and placement prominence. *Journal of Advertising*, 37(1), 89-98.
- Daugherty, T. & Gangadharbatla, H. (2005). A Comparison of Consumers' Responses to Traditional Advertising and Product Placement Strategies: Implications for Advertisers. American Marketing Association Conference Proceedings, Chicago, 16, 24.
- Devlin, M., & Combs, J. (2015). From Apple to Omega: an analysis of brand placement in 2010 top-earning films. *Journal of Global Scholars of Marketing Science*, 25(1), 75-90.
- Eliashberg, J., Elberse, A., & Leenders, M. A. (2006). The motion picture industry: Critical issues in practice, current research, and new research directions. *Marketing Science*, 25(6), 638-661.
- Ferguson, N. S., & Burkhalter, J. N. (2015). Yo, DJ, That's My Brand: An Examination of Consumer Response to Brand Placements in Hip-Hop Music. *Journal of Advertising*, 44(1), 47-57.
- Ferraro, R., & Avery, R. J. (2000). Brand appearances on prime-time television. *Journal of Current Issues & Research in Advertising*, 22(2), 1-15.
- Gibson, B., Redker, C., & Zimmerman, I. (2014). Conscious and nonconscious effects of product placement: Brand recall and active persuasion knowledge affect brand attitudes and brand self-identification differently. *Psychology of Popular Media Culture*, 3(1), 19.
- Geiger, S., & Newhagen, J. (1993). Revealing the black box: Information processing and media effects. *Journal of Communication*, 43(4), 42-50.
- Gupta, P.B. & Lord, K.R. (1998) 'Product placement in movies: the effect of prominence and mode on audience recall', *Journal of Current Issues and Research in Advertising*, 20(1), 47-59.
- Gupta, P.B., Balasubramanian, S.K. & Klassen, M.L. (2000). Viewers' Evaluations of Product Placements in Movies: Public Policy Issues and Managerial Implications. *Journal of Current Issues and Research in Advertising*, 22, 41-52

- Hochreiter, S., & Schmidhuber, J. (1997). Long short-term memory. *Neural computation*, 9(8), 1735-1780.
- Holden, S. J., & Vanhuele, M. (1999). Know the name, forget the exposure: Brand familiarity versus memory of exposure context. *Psychology and Marketing*, 16(6), 479-496.
- Homer, P. M. (2009). Product placements. *Journal of Advertising*, 38(3), 21-32.
- Hong, S., Wang, Y. J., Santos, G. D. L. (2008). The effective product placement: Finding appropriate methods and contexts for higher brand salience, *Journal of Promotion Management*, 14(1/2), 103-120
- Janiszewski, C. (1993). Preattentive mere exposure effects. *Journal of Consumer Research*, 376-392.
- Jenner, M. (2014). Is this TVIV? On Netflix, TVIII and binge-watching. *New Media & Society*, 1461444814541523.
- Kamleitner, B., & Khair Jyote, A. (2013). How using versus showing interaction between characters and products boosts product placement effectiveness. *International Journal of Advertising*, 32(4), 633-653.
- Karrh, J. A., McKee, K. B., & McKee, C. J. (2003). Practitioners' evolving views on product placement effectiveness. *Journal of advertising research*, 43(2), 138-149.
- Köllisch, F., Nurminen, V., & Tiavin, K. (2015). Product placement in Hollywood blockbusters: brand recognition and attitude towards the practice.
- Kozary, B., & Baxter, S. (2010). The influence of product placement prominence on consumer attitudes and intentions: A theoretical framework. *University of Newcastle*.
- Krugman, H. E. (1977). Memory without recall, exposure without perception. *Journal of advertising research*, 17(4), 7-12.
- Kwon, E. S. (2012). Exploring Consumers' Attitudes and Behavior toward Product Placement in Television Shows. *Media Studies - Theses*. Paper 4.
- Law, S., & Braun, K. A. (2000). I'll have what she's having: Gauging the impact of product placements on viewers.
- Law, S., & Braun-LaTour, K. A. (2004). Product placements: How to measure their impact. *The psychology of entertainment media: Blurring the lines between entertainment and persuasion*, 63-78.

- La Ferle, C., & Edwards, S. M. (2006). Product placement: How brands appear on television. *Journal of Advertising*, 35(4), 65-86.
- Lee, A. Y. (2002). Effects of implicit memory on memory-based versus stimulus-based brand choice. *Journal of Marketing Research*, 39(4), 440-454.
- Lee, M., & Faber, R. J. (2007). Effects of product placement in on-line games on brand memory: A perspective of the limited-capacity model of attention. *Journal of advertising*, 36(4), 75-90.
- Lehu, J. (2008). Branded Entertainment: Product Placement & Brand Strategy in the Entertainment Business. *Brand Management*, 16(3), 216-217.
- Lehu, J. M., & Bressoud, É. (2009). Recall of brand placement in movies: Interactions between prominence and plot connection in real conditions of exposure. *Recherche et Applications en Marketing (English Edition)*, 24(1), 7-26.
- Lord, K. R., & Gupta, P. B. (2010). Response of buying-center participants to B2B product placements. *Journal of Business & Industrial Marketing*, 25(3), 188-195.
- Maguire, E. A., Frith, C. D., & Morris, R. G. M. (1999). The functional neuroanatomy of comprehension and memory: the importance of prior knowledge. *Brain*, 122(10), 1839-1850.
- Matrix, S. (2014). The Netflix Effect: Teens, Binge Watching, and On-Demand Digital Media Trends. *Jeunesse: Young People, Texts, Cultures*, 6(1), 119-138.
- Mayer, R. E., & Moreno, R. (1998). A split-attention effect in multimedia learning: Evidence for dual processing systems in working memory. *Journal of educational psychology*, 90(2), 312.
- McCarthy, M. (1994). Studios place, show and win: Product placement grows up. *Brandweek*, 35(13), 30-31.
- McNatt, R., & Oleck, J. (2000). The plot thickens, like Heinz ketchup. *Business Week*, 14.
- Moore, A. E. (2015). Binge Watching: Exploring the Relationship of Binge Watched Television Genres and Colleges at Clemson University.
- Mousavi, S. Y., Low, R., & Sweller, J. (1995). Reducing cognitive load by mixing auditory and visual presentation modes. *Journal of educational psychology*, 87(2), 319.
- Muzellec, L., Kanitz, C., & Lynn, T. (2013). Fancy a coffee with Friends in 'Central Perk'? Reverse product placement, fictional brands and purchase intention. *International Journal of Advertising*, 32(3), 399-417.

- Nebenzahl, I. D., & Secunda, E. (1993). Consumers' attitudes toward product placement in movies. *International Journal of Advertising*, 12(1), 1-11.
- Nelson, M. R. (2002). Recall of brand placements in computer/video games. *Journal of advertising research*, 42(2), 80-92.
- Newell, J., Salmon T. C., & Change, S. (2006). The Hidden History of Product Placement. *Journal of Broadcasting & Electronic Media*, 50:4, 575-594
- Obermiller, C., Spangenberg, E., & MacLachlan, D. L. (2005). Ad skepticism: The consequences of disbelief. *Journal of advertising*, 34(3), 7-17.
- Patton, D. (2014). *A Study of the Effect of Product Placement in Television Shows and its Influence on Consumer Behavior* (Doctoral dissertation, California Polytechnic State University, San Luis Obispo).
- Paivio, A. (1991). Dual coding theory: Retrospect and current status. *Canadian Journal of Psychology/Revue canadienne de psychologie*, 45(3), 255.
- Posner, M. I., Nissen, M. J., & Klein, R. M. (1976). Visual dominance: an information-processing account of its origins and significance. *Psychological review*, 83(2), 157.
- Preston, C. C., & Colman, A. M. (2000). Optimal number of response categories in rating scales: reliability, validity, discriminating power, and respondent preferences. *Acta psychologica*, 104(1), 1-15.
- Russell, Cristel Antonia, Barbara B. Stern, and Barbara B. Stern. "Consumers, characters, and products: A balance model of sitcom product placement effects." *Journal of Advertising* 35.1 (2006): 7-21.
- Russell, C. A.. (2002). Investigating the Effectiveness of Product Placements in Television Shows: The Role of Modality and Plot Connection Congruence on Brand Memory and Attitude. *Journal of Consumer Research*, 29(3), 306–318. <http://doi.org/10.1086/344432>
- Russell, C. A., Stern, B. B., & Stern, B. B. (2006). Consumers, characters, and products: A balance model of sitcom product placement effects. *Journal of Advertising*, 35(1), 7-21.
- Sabherwal, S., Pokrywczynski, J., & Griffin, R. (1994). Brand recall for product placements in motion pictures: A memory-based perspective. Conference proceedings of AEJMC 1994 Ad Division—Research Track. Atlanta, GA.
- Schacter, D.L. (1987). Implicit memory: History and current status. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 13, 501-518.

- Schemer, C., Matthes, J., Wirth, W. and Textor, S. (2008), Does “Passing the Courvoisier” always pay off? Positive and negative evaluative conditioning effects of brand placements in music videos. *Psychol. Mark.*, 25: 923–943. doi: 10.1002/mar.20246
- Shapiro, S., & Krishnan, H. S. (2001). Memory-based measures for assessing advertising effects: a comparison of explicit and implicit memory effects. *Journal of advertising*, 30(3), 1-13.
- Soba, M., & Aydin, M. (2013). Product placement efficiency in marketing communication strategy. *International Journal of Business and Management*, 8(12), 111.
- Stern, B., and Russell, C.A. (2004), „Consumer responses to product placement in television sitcoms: Genre, sex and consumption“ *Consumption, Markets and Culture*, Vol. 7, Iss. 4, pp. 371-394
- Steortz, E. M. (1987). The cost efficiency and communication effects associated with brand name exposure within motion pictures. *Unpublished master's thesis. West Virginia University*.
- Tulving, E., & Watkins, M. J.. (1973). Continuity between Recall and Recognition. *The American Journal of Psychology*, 86(4), 739–748. <http://doi.org/10.2307/1422081>
- Unnava, H. R., & Burnkrant, R. E. (1991). An imagery-processing view of the role of pictures in print advertisements. *Journal of Marketing Research*, 226-23
- Van Reijmersdal, E. (2009). Brand placement prominence: good for memory! Bad for attitudes?. *Journal of Advertising Research*, 49(2), 151-153.
- Van Reijmersdal, E., Neijens, P., & Smit, E. G. (2009). A new branch of advertising: Reviewing factors that influence reactions to product placement. *Journal of advertising research*, 49(4), 429-449.
- Walton, A. (2010). The Evolution of Product Placement in Film. *The Elon Journal of Undergraduate Research in Communications*, 1(1)
- Williams, K. C., Page, R. A., Petrosky, A. R., & Hernandez, E. H. (2010). Multi-generational marketing: Descriptions, characteristics, lifestyles, and attitudes. *Journal of Applied Business and Economics*, 11(2), 21-36.
- Williams, K., Petrosky, A., Hernandez, E., & Page, R. (2011). Product placement effectiveness: revisited and renewed. *Journal of Management and Marketing Research*, 7(1), 1-24.

Yang, M. & Roskos-Ewoldsen, D.R. (2007). The Effectiveness of Brand Placements in the Movies: Levels of Placements, Explicit and Implicit Memory, and Brand-Choice Behavior. *Journal of Communication*, 57, 469-489.

Zenhausen, R., & Gebhardt, M. (1979). Hemispheric dominance in recall and recognition. *Bulletin of the Psychonomic Society*, 14(1), 71-73.

# Appendix A Levels of Prominence



Background: The product is identifiable but not at the forefront of the shot.



Discreet: Likely viewers will not see the whole product but the brand is still present at the forefront of the shot. The product usually only occupies a small part of the screen and/or only part of the product is visible.



Subtle: The product is used at the forefront of a scene but is not being shown in an obvious way




Obvious: the purpose of the shot is clearly to show the product but it does not occupy ¼ or more of the screen.



Close-Up: Product occupies ¼ or more of the screen



Appendix B  
Recall Question Example


**Laurentian University**  
 Université Laurentienne

Resize font: 

House of Cards Episode 1 Questionnaire

Page 4 of 26

**Question 1**

7) What type of car was in the accident at the beginning of the episode?


\* must provide value


8) \* must provide value



Y-M-D H:M:S

Appendix C  
Recognition Question Example

**LaurentianUniversity**  
Université**Laurentienne**

Resize font: 

House of Cards Episode 1 Questionnaire

Page 5 of 26

**Question 2**

9) What word does Frank use to describe how Claire looks after zipping up her dress?  
\* must provide value

☐ Stunning  
☐ Gorgeous  
☐ Beautiful  
☐ Sexy

reset

<< Previous Page

Next Page >>

Appendix D

## Online Tasks Questions Break Down (for brand questions)

Mode	Number of Questions in Total
Visual Recall	44
Visual Recognition	46
Audio Recall	18
Audio Recognition	10
Both Recall	8
Both Recognition	5

Prominence	Number of Questions in Total
Background Recall	9
Background Recognition	15
Discreet Recall	12
Discreet Recognition	9
Subtle Recall	11
Subtle Recognition	12
Obvious Recall	3
Obvious Recognition	4
Close up Recall	9
Close up Recognition	8

Appendix E  
**Demographics Questionnaire**

Name: \_\_\_\_\_

Age: \_\_\_\_\_

Gender: \_\_\_\_\_

Do you have normal vision? YES NO If not, do you wear corrective lenses?  
YES NO

Have you previously watched the show House of Cards?  
YES NO

If so, approximately when did you last watch the show? \_\_\_\_\_

If so, approximately how much of the show did you watch? \_\_\_\_\_

Contact Information (e-mail or phone #): \_\_\_\_\_

Appendix F  
Emailed Consent Form



**Laurentian University**  
**Université Laurentienne**

**Informed Consent for Participation in a Research Study**

**Project Title:**

Recognition and Recall: Effects of Netflix's on viewer memory.

I, \_\_\_\_\_

*(Please Print)* consent to participate in this study.

I understand that:

1. This research project is interested in recall and recognition of brands depending on visibility and schema incongruity within a TV show.
2. I have been clearly informed of the general conditions of this study. The task that I will perform consists of observing one season of a television show on my own time minimizing as many distractions as possible. I will log the time and date of when I watch each episode and note any possible distractions. After each episode I will answer a series of questions using an online link as a recall and recognition task.
3. Participation in this study requires 13 episodes within two weeks with each episode lasting approximately 1 hour.
4. I know that it is possible to feel tired after I have participated in the study. I am aware that I am able to take a break at any time if I feel tired.
5. I may remove myself from the study at any time without being penalized.
6. All information gathered during the study will be kept confidential and my responses will be kept private. An identification number will be assigned to me to ensure confidentiality of my responses.
7. If I experience any distress from the content of the research project I can contract Laurentian University counseling and support services at G-7-Student Street, Single Student Residence (SSR) by calling (705) 673-6506 during office hours or send an email to supportprograms@laurentian.ca.

**I understand the above information pertaining to the study, and that I may ask questions if necessary. I also understand that I may stop the experiment at any time without justification. I therefore consent to participate in this study within the specified conditions.**

\_\_\_\_\_  
Participant Signature

\_\_\_\_\_  
Date

Appendix G  
Informed consent within memory task

2) **Informed Consent for Participation in a Research Study**

I understand that:

1. This research project is interested in recall and recognition of brands depending on visibility and schema incongruity within a TV show.

2. I have been clearly informed of the general conditions of this study. The task that I will perform consists of observing one season of a television show on my own time minimizing as many distractions as possible. I will log the time and date of when I watch each episode and note any possible distractions. After each episode I will answer a series of questions using an online link as a recall and recognition task.

3. Participation in this study requires 13 episodes within two weeks with each episode lasting approximately 1 hour.

4. I know that it is possible to feel tired after I have participated in the study. I am aware that I am able to take a break at any time if I feel tired.

5. I may remove myself from the study at any time without being penalized.

6. All information gathered during the study will be kept confidential and my responses will be kept private. An identification number will be assigned to me to ensure confidentiality of my responses.

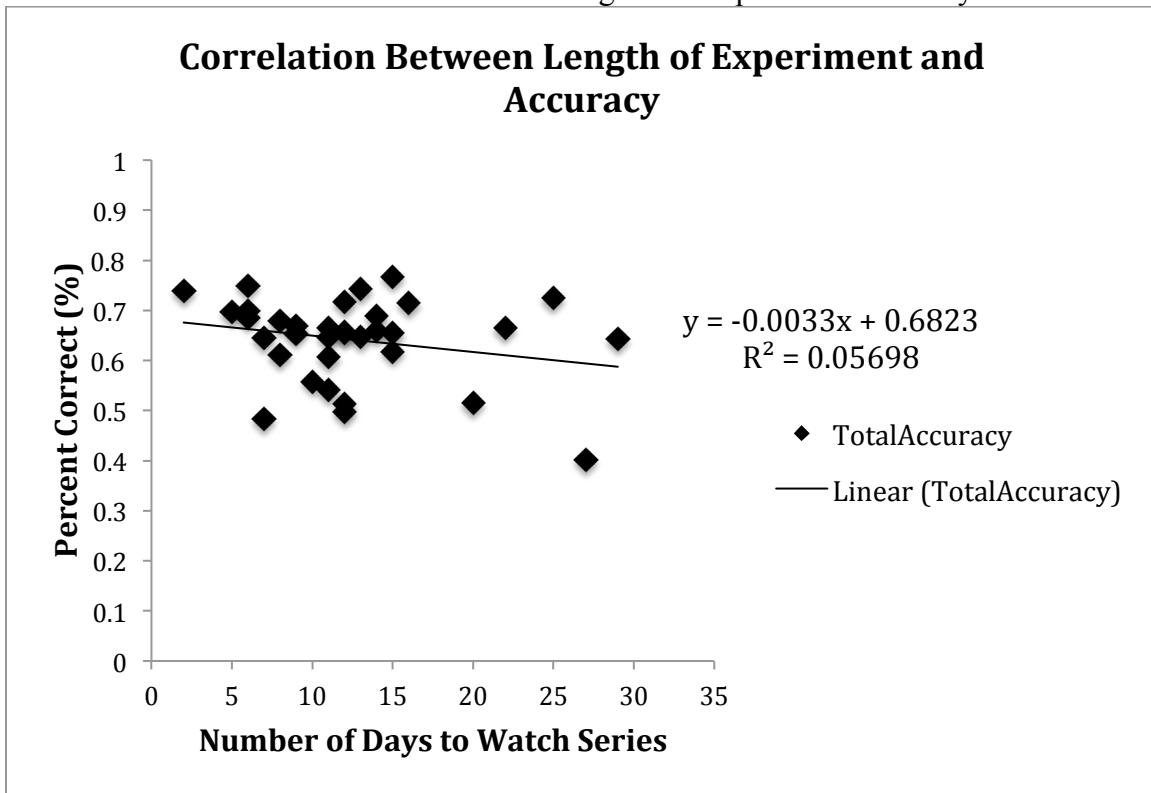
7. If I experience any distress from the content of the research project I can contract Laurentian University counseling and support services at G-7-Student Street, Single Student Residence (SSR) by calling (705) 673-6506 during office hours or send an email to [supportprograms@laurentian.ca](mailto:supportprograms@laurentian.ca).

I understand the above information pertaining to the study, and that I may ask questions if necessary. I also understand that I may stop the experiment at any time without justification. I therefore consent to participate in this study within the specified conditions.

☒ I understand the above information pertaining to the study, and that I may ask questions if necessary. I also understand that I may stop the experiment at any time without justification. I therefore consent to participate in this study within the specified conditions.

Appendix H

Test for correlation between length to complete and accuracy



Appendix I  
Participant log sheet

Episode	Date	Start Time	End Time	Number of people in the room while viewing	Technology Use	Any other possible distractions	Device Used for Viewing	Is this your typical device for viewing?
Ex.	Sept, 12 <sup>th</sup>	8:37pm	9:30pm	0	Phone	None	Laptop	No
Ex.	Sept, 14 <sup>th</sup>	1:03pm	2:15pm	2	Laptop	Stopped to let the dog out	TV	Yes
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								



Appendix J  
Time differences

Episode	Average Time		
	Between requesting link and receiving link	Between receiving link and completing survey	Between requesting link and completing survey
1	3.16127451	13.01862745	16.17990196
2	2.730392157	6.167647059	8.898039216
3	3.335784314	4.237254902	7.573039216
4	4.873529412	6.842647059	11.71617647
5	4.267156863	10.39117647	14.65833333
6	3.461764706	13.51960784	16.98137255
7	2.342156863	12.47843137	14.82058824
8	4.203921569	29.49215686	33.69607843
9	4.334313725	18.56568627	22.9
10	5.510784314	12.65735294	17.29264706
11	3.975980392	8.855392157	12.83137255
12	3.703921569	9.569117647	13.27303922
13	4.205392157	10.96911765	15.1745098
Average	3.85433635	12.05878582	15.84577677

Appendix K  
Result graph for prominence

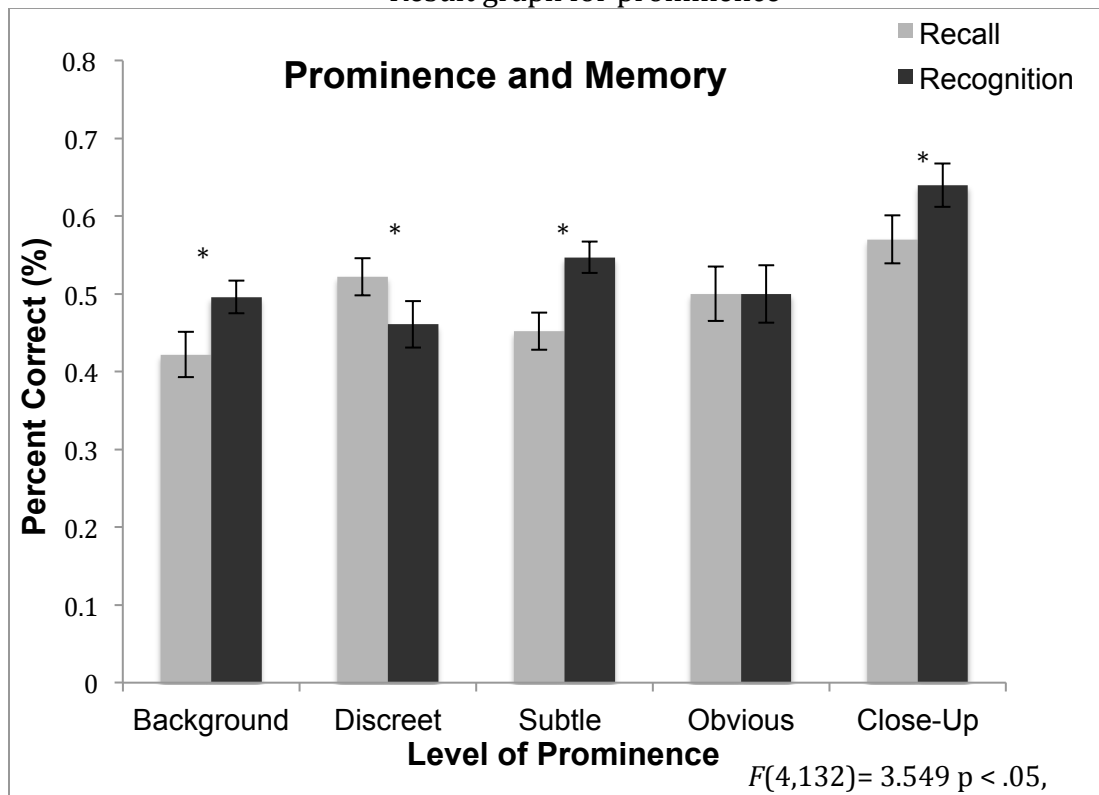


Figure 1: Significant differences were found for both types of memory for background and close-up, discreet and subtle, and subtle and close-up. Significant differences were found for recall for background and discreet. Significant differences were found for recognition for discreet and close-up and obvious and close-up.

\* = significance.

Appendix L  
Resultgraph for mode

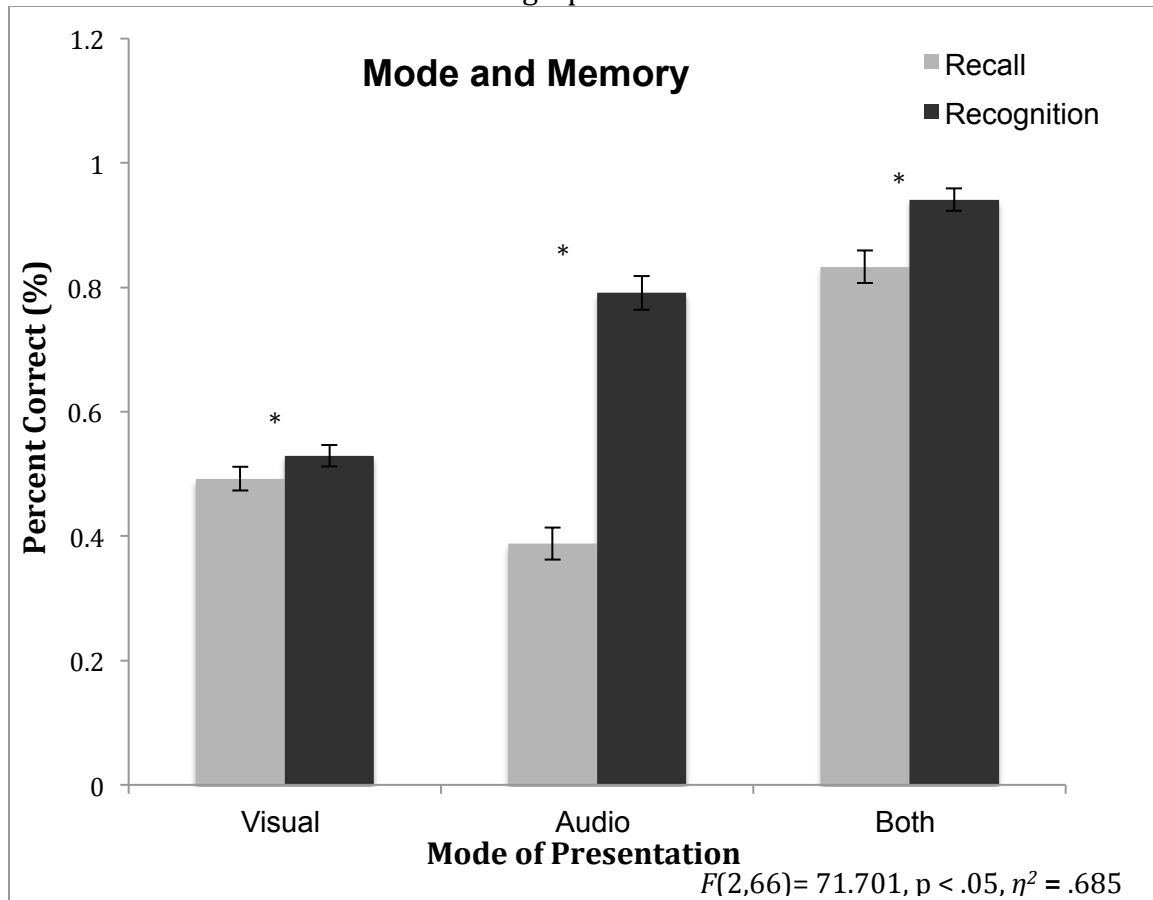


Figure 2: Significant differences were found for both types of memory for audio-visual together (both) than either mode on its own (audio only, visual only). Significant difference was found between audio and visual only, with audio obtaining higher accuracy for recognition, and visual for recall.  
\*= significance.

Appendix M  
Accuracy across time graph

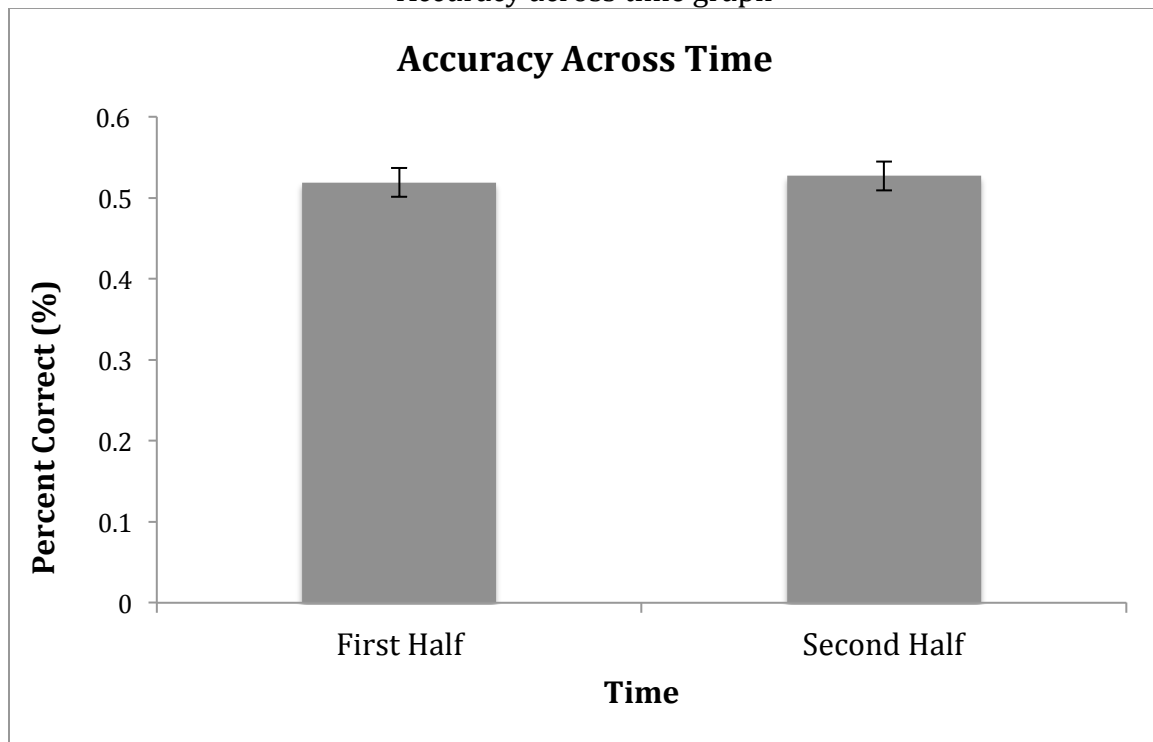


Figure 3:  $F(1,33) = .286$ ,  $p > .05$ . No significant difference found between time in experiment and accuracy.